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ABSTRACT

An alternating phase shift mask with dark loops thereon, a memory array fabricated with the alternating phase shift mask, and a method of fabricating the memory. The dark loops in the mask always separate first regions with 180° phase difference from second regions with 0° phase difference to define active areas or gate-lines in a DRAM chip. By using the alternating phase shift mask to pattern gate-lines or active areas in a DRAM array, no unwanted image is created in the DRAM array and only one exposure is needed to achieve high resolution requirement.